

**The Observation and Study  
of Two Prominence Events in the Infrared**  
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This paper reports the infrared observation of two prominence events on Jan. 8, 1999 and Feb. 9, 1999 at H Paschen  $\beta$  12818Å, H Bracket  $\alpha$  40512Å, and H Pfund  $\beta$  46525Å using the McMath Telescope. We scanned the spectrograph slit across the prominences parallel to the solar limb to obtain three-dimensional data cubes (two spatial dimensions and one spectral dimension). By fitting these observed lines, we can directly determine some important physical parameters such as Doppler width, the optical thickness at line center, and the line displacement. Combined with simultaneous observation of Balmer  $H_\alpha$ ,  $H_\beta$ , and K lines, the new results of structure and dynamics of limb prominence are presented. These results imply that these infrared lines can penetrate through the prominence and become the potential probe and tool of them, while  $H_\alpha$  and  $H_\beta$  sense the prominence skin only.